

## PATENT ABSTRACTS OF JAPAN

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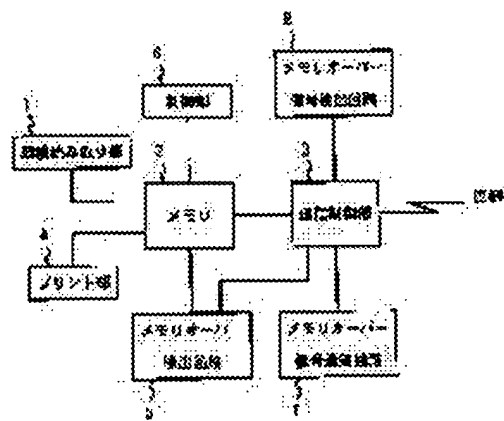
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(54) FACSIMILE EQUIPMENT

(57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent the repetition of useless communication such that reception is disabled because a capacity of a receiver facsimile equipment overflows in the middle of reception.

**SOLUTION:** When image data are being stored in a memory 2 and there is no idle memory area in the memory 2, a memory overflow takes place, and the memory 2 can no longer store data. When a memory-over detection circuit 5 detects the occurrence of a memory-over, the circuit 5 gives a memory-over signal to a communication control section 3. The communication control section 3 adds the memory-over signal to a procedure end signal of the facsimile communication recommendations via a memory-over signal notice circuit



7 to inform it to a transmitter side and then interrupts the line. Upon detection of the memory-over signal by a memory-over signal detection circuit 8, the transmitter side stores the number of pages having been sent thus far without re-transmission. When an idle capacity of the memory is increased more than the memory capacity required for the image data of the pages, the receiver side dials the transmitter side and the transmitter side makes re-transmission.

## LEGAL STATUS

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CLAIMS

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[Claim(s)]

[Claim 1] The manuscript reading section which reads and data-izes a manuscript, and the memory which stores the drawing data of the document which the read drawing data accumulated and received, The communications control section which performs transmission and reception of said both drawings data, and the print section which prints said receiving drawing data stored in said memory, The memory exaggerated detector which supervises the memory exaggerated generating situation of said memory, The notice circuit of a memory exaggerated signal which is controlled by said communications control section, adds a memory exaggerated signal to the procedure terminate signal of facsimile communication advice, and is notified to a transmitting side, Facsimile apparatus characterized by consisting of a memory exaggerated signal detector which detects said memory exaggerated signal, and a control section which controls the whole.

[Claim 2] When the pagination which said transmitting side did not retransmit a message when said memory exaggerated signal detector detected said memory exaggerated signal, but had transmitted now is memorized and the availability of said memory increases more than the memory space of the drawing data of said page, it is the facsimile apparatus according to claim 1 which carries out dial call origination to said transmitting side, and is characterized by retransmitting a message from a receiving side.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the transmission and reception of facsimile apparatus which have a memory are recording function.

[0002]

[Description of the Prior Art] The technique about the transmission and reception of facsimile apparatus which have the conventional memory are recording function is indicated by JP,5-56234,A as an example, and the outline is as follows.

[0003] The memory space Management Department which is a means to notify the empty storage capacity of the receiving memory section to a transmitting side is established in a receiving side. The arithmetic circuit section which is a means to determine the amount of transmit data smaller than the empty memory capacity of the receiving memory section per transmitting manuscript page according to those contents of a notice, and the control section and the modem section which are a means to transmit this determined data of an amount are prepared in a transmitting side.

[0004] It is vacant per page at the time of facsimile reception, memory space is notified to a transmitting side, and an unnecessary communication link is prevented in a transmitting side by [ the / which is vacant, will transmit rather than memory space if transmit data is smallness and will not transmit if it is size ] having been notified.

[0005]

[Problem(s) to be Solved by the Invention] In said Prior art, after the empty memory space of a receiving side decreasing and stopping a communication link by the page the middle, timing of the resumption of a communication link of the remaining pages will not be able to be recognized, but, generally retransmission of message must be started after fixed time amount by the timer, and it will become that the empty memory space of a receiving side is smallness also at the time with a useless communication link.

[0006] Moreover, generally memory not only stores an incoming correspondence, but is used for are recording of a transmitting document. If the document of another transmitting reservation is read even if it is vacant at the time of reception initiation and memory space is enough, memory over will be generated too.

[0007] If memory over occurs during reception, the page which cut the circuit in the form of the abnormalities in a communication link, and became memory over on the way will be eliminated from memory. Since the situation of such a receiving side cannot be known, it will retransmit a message, and memory over will occur in the same place, and a transmitting side will repeat the abnormalities in a communication link.

[0008] Then, it is going to prevent that improve the fault of said Prior art, the memory of the facsimile apparatus of a receiving side serves as memory over on the way, and this invention repeats a useless communication link it becomes impossible to receive.

[0009]

[Means for Solving the Problem] The following means is used for this invention in order to solve said technical problem.

[0010] (1) The manuscript reading section which reads and data-izes a manuscript, and the memory which stores the drawing data of the document which the read drawing data accumulated and received, The communications control section which performs transmission and reception of said both drawings data, and the print section which prints said receiving drawing data stored in said memory, The memory exaggerated detector which supervises the memory exaggerated generating situation of said memory, The notice circuit of a memory exaggerated signal which is controlled by said communications control section, adds a memory exaggerated signal to the procedure terminate signal of facsimile communication advice, and is notified to a transmitting side, Facsimile apparatus which consists of a memory exaggerated signal detector which detects said memory exaggerated signal, and a control section which controls the whole.

[0011] (2) It is the facsimile apparatus of the aforementioned (1) publication which said transmitting side will not retransmit a message if said memory over signal detector detects said memory exaggerated signal, but will carry out dial call origination from a receiving side to said transmitting side if the pagination which had transmitted now is memorized and the availability of said memory increases more than the memory space of the drawing data of said page, and retransmits a message.

[0012] The facsimile apparatus of this invention receives to memory over rather than notifies empty memory space like a Prior art to a transmitting side. The empty memory space in the initiation time of a receiving page etc. is because it changes without limit on the way by other are recording, deletion, etc. of a transmitting reservation document.

[0013] If memory over occurs, that will be notified to a transmitting side and a circuit will be cut. Unlike the case of abnormalities in a communication link, such as a poor circuit, a transmitting side will not perform retransmission-of-message call origination itself, if that is received.

[0014] When it is vacant in a receiving side and allowances appear in memory space, dial call origination is carried out from a receiving side to a transmitting side. A transmitting side will perform retransmission of message from the page which was not able to be sent with the gestalt of transmission-and-reception conversion (polling communication link), if the arrival from a receiving side is received.

[0015]

[Embodiment of the Invention] The example of a gestalt of 1 operation of this invention is explained with reference to drawing 1 - drawing 3.

[0016] Drawing 1 is the block diagram showing the configuration of the facsimile apparatus of the example of a gestalt of 1 operation of this invention.

[0017] The manuscript reading section 1 which the conventional facsimile apparatus reads a manuscript and is data-ized, The memory 2 which stores the drawing data of the document which the read drawing data accumulated and received, The communications control section 3 which performs transmission and reception of drawing data based on a facsimile communication procedure, It consists of the print section 4 which prints the drawing data stored in memory 2, a memory exaggerated detector 5 which supervises the memory exaggerated generating situation of memory 2, and a control section 6 which controls all them.

[0018] As for the facsimile apparatus of the example of a gestalt of 1 operation of this invention, the notice circuit 7 of a memory exaggerated signal and the memory exaggerated signal detector 8 are added to the conventional facsimile apparatus.

[0019] As an example of a gestalt of 1 operation of this invention, it explains with reference to the block diagram of drawing 1.

[0020] This facsimile apparatus transmits and receives the publication number which is an identification number of a document in a facsimile its company procedure signal at the time of communication link initiation.

[0021] In the receiving side, drawing data are first stored in memory 2, receiving in the communications control section 3. After a page finishes, the print initiation demand of the drawing data stored in memory 2 is told to the print section 4. However, if the detail paper is exhausted in the print section 4, or a detail-

paper jam is generated and printing becomes impossible, it will wait for a printed output until supply and jam discharge of the detail paper are made and a print becomes possible. Therefore, it becomes memory intercepting and reception of the following page is performed continuously.

[0022] If drawing data are stored in memory 2 and empty memory is lost soon, memory over will occur and storing will become impossible. The memory exaggerated detector's 5 detection of memory exaggerated generating tells a memory exaggerated signal to the communications control section 3.

[0023] With the conventional facsimile apparatus, since the circuit was only cut here, by the transmitting side, it was not able to know what occurred by the receiving side.

[0024] In the facsimile apparatus of the example of a gestalt of one fruit of this invention, after the communications control section 3 adds a memory exaggerated signal to the procedure terminate signal of facsimile communication advice through the notice circuit 7 of a memory exaggerated signal and notifies to a transmitting side here, a circuit is cut.

[0025] After cutting a circuit, the drawing data of the page which became memory over and was not able to be received by the middle are eliminated from memory, and this eliminated amount of data is memorized.

[0026] In a transmitting side, if a memory exaggerated signal is detected from the procedure terminate signal of facsimile communication advice through the memory exaggerated signal detector 8, a document will be held without shifting to retransmission-of-message actuation of this document, the pagination which had transmitted now will be memorized, and it will wait for the arrival from a receiving side.

[0027] A printed output is performed, supply and jam discharge of the detail paper are made soon, it is eliminated from memory or transmission, interruption deletion, etc. of other documents are performed, and if it is vacant from the memory space of the drawing data of a page which became memory over and was not able to receive and memory increases enough while having eliminated previously, dial call origination will be carried out to a transmitting side.

[0028] The monitor of empty memory space is performed per second by the control section 6.

[0029] It shall be set to memory space +a of the drawing data of a up to while having eliminated the judgment threshold of whether empty memory increased enough, and a shall carry out a user setup per kilobyte.

[0030] If call origination is carried out and it is connected with a transmitting side, a publication number will be transmitted in a facsimile its company procedure signal.

[0031] In a transmitting side, if the arrival from a receiving side is received, the publication number of a facsimile its company procedure signal will be received first. It distinguishes whether it is the document with which the publication number received the memory exaggerated signal during transmission before, and if that is right, it will move to the procedure of transmission-and-reception conversion, and will shift to a polling send action. (Otherwise, it becomes the usual reception.) If it shifts to a send action, before memorizing, the pagination which is in the middle of transmitting and received the memory exaggerated signal will be taken out, and transmission will be started from the page.

[0032] In a receiving side, it shifts to the polling reception actuation after a procedure of transmission-and-reception conversion, and reception is started.

[0033]

[Effect of the Invention] According to this invention, when memory over occurs in a receiving side during a communication link, after a receiving side has allowances in memory, the effectiveness of preventing repeating a useless communication link on the way repeatedly can be done so by carrying out dial call origination to a transmitting side, and retransmitting a message with the gestalt of a polling communication link, without a transmitting side starting retransmission of message.

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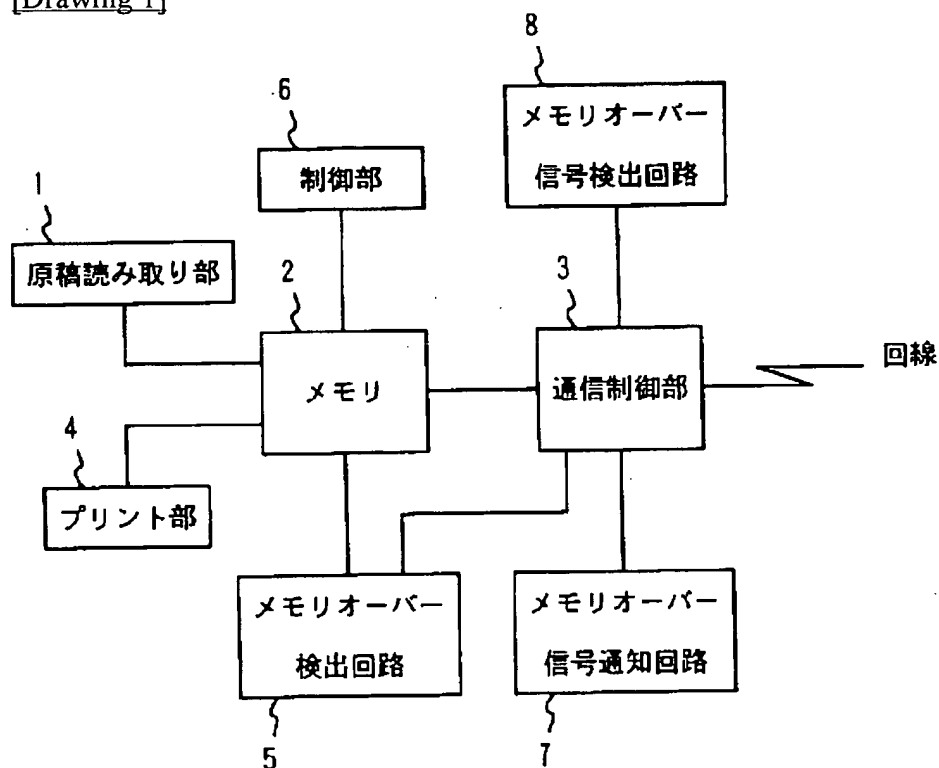
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DRAWINGS

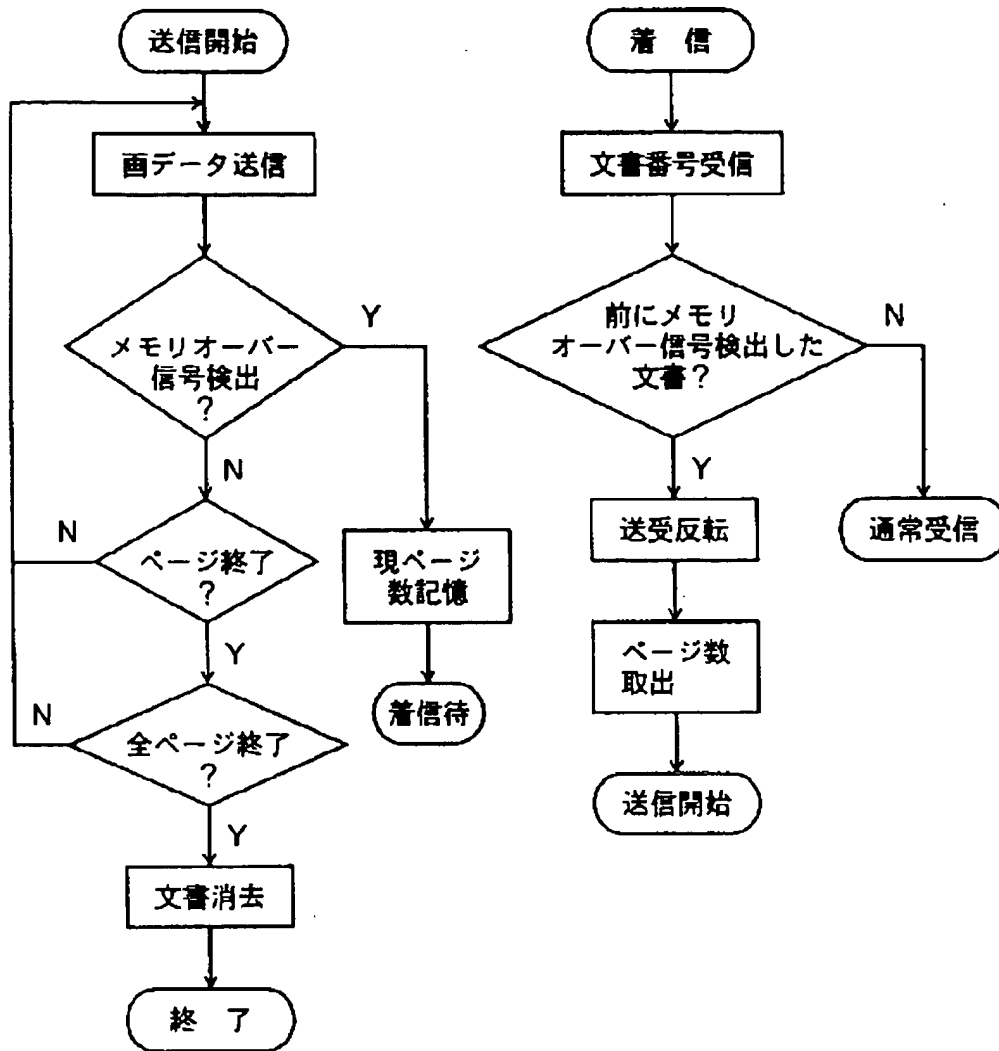
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[Drawing 1]



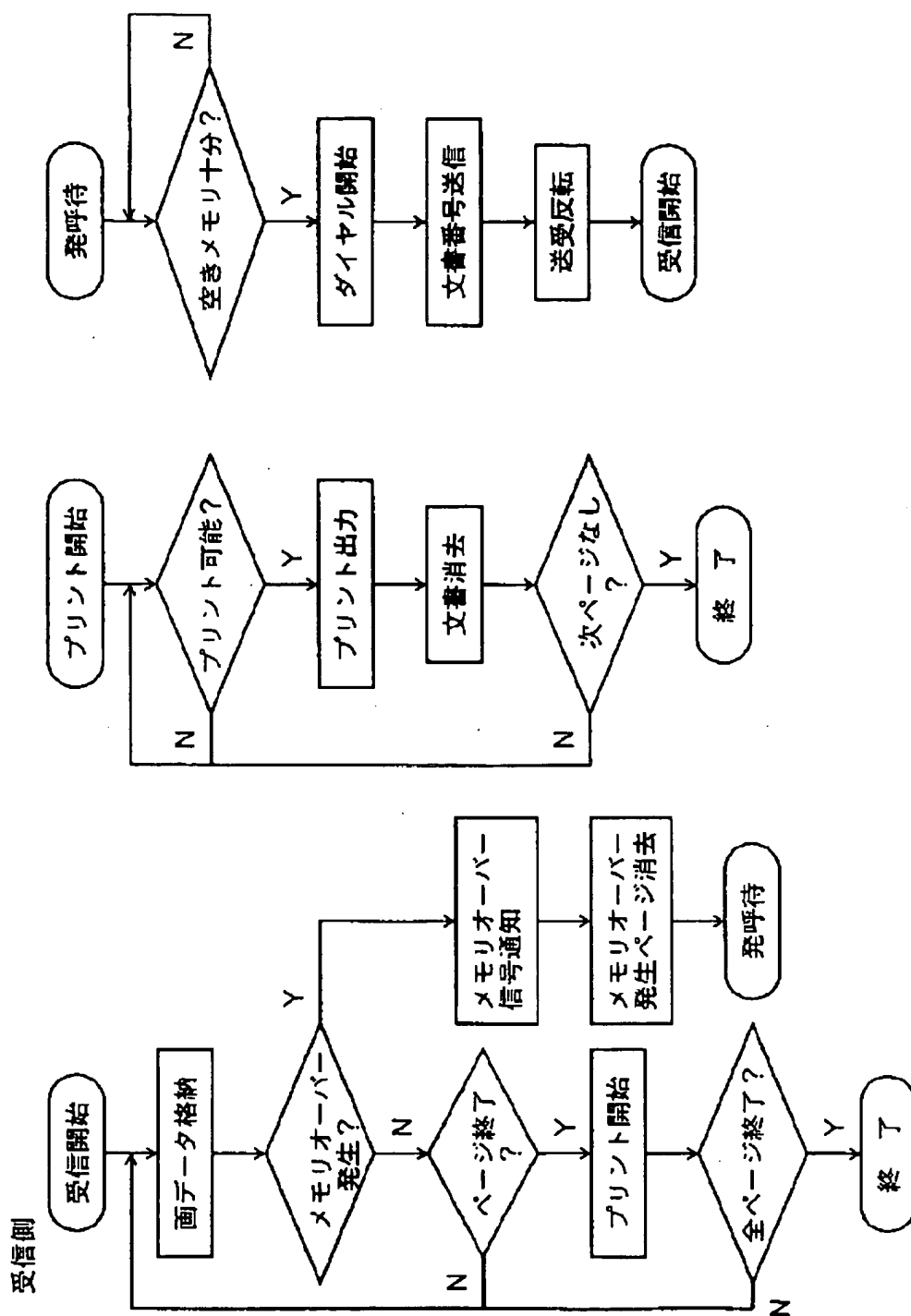
[Drawing 2]

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[Drawing 3]





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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the configuration of the facsimile apparatus of the example of a gestalt of 1 operation of this invention.

[Drawing 2] It is the transmitting-side flow chart of the facsimile apparatus of the example of a gestalt of 1 operation of this invention.

[Drawing 3] It is the receiving-side flow chart of the facsimile apparatus of the example of a gestalt of 1 operation of this invention.

[Description of Notations]

1 Manuscript Reading Section

2 Memory

3 Communications Control Section

4 Print Section

5 Memory Exaggerated Detector

6 Control Section

7 Notice Circuit of Memory Exaggerated Signal

8 Memory Exaggerated Signal Detector

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[Translation done.]